

**BELT SYMPOSIUM VI and TOBACCO ROOT GEOLOGICAL SOCIETY 48th  
ANNUAL FIELD CONFERENCE, SALMON, IDAHO, JULY 27 – 30, 2023**



*Mesoproterozoic Swauger Formation quartzite with darker, fine-grained beds near Taylor Mountain, Salmon River Mountains, Idaho. Photo by Russ Burmester*

### **Salmon Area Details, Conference Schedule, and Registration**

Belt Symposia are held once every ten years and this is the 6th installment. This year's symposium is being held in conjunction with the 48th Annual Tobacco Root Geological Society Field Conference in Salmon, Idaho. The conference activities begin on late Thursday afternoon and extend through Sunday afternoon (July 27–July 30, 2023). Pre- and post-meeting field trips are also offered.

The symposia are organized by the Belt Association and are dedicated to geologic research on all aspects of the Belt Basin, an important Mesoproterozoic sedimentary body in the Northern Rockies. The basin covers a large region in Montana, Idaho, Washington, British Columbia, and Alberta. It is one of the thickest, best exposed, most accessible, and well-studied Mesoproterozoic basins in the world. The Belt Symposia draw international researchers in Precambrian stratigraphy, tectonics, geodynamics, paleomagnetism, ore deposits, paleoclimate, paleontology, sedimentology, geochronology, and other disciplines.

This announcement provides information on the meeting schedule and events, lodging, and meals. Tourist season means lots of people in the town of Salmon, so plan accordingly. If you are staying in a motel, book early. Numerous restaurants are available but as an alternative consider the dinners that we are providing for all three nights. Note that you will need to make or obtain your own breakfast. A group camping area is available on Hammon Drive. If you plan to stay elsewhere, give yourself plenty of time to reach the Sacajawea Center to catch your field trip group.

If have questions or would like to volunteer, please contact our conference organizer, Reed Lewis ([reedl@uidaho.edu](mailto:reedl@uidaho.edu)).

### **On-site meeting registration and conference venue**

Our primary venue is the beautiful Sacajawea Center located 2 miles east of Salmon, Idaho on Hwy 28. The WEB address is: [Sacajawea Center | Interpretive, Cultural, Educational](#)

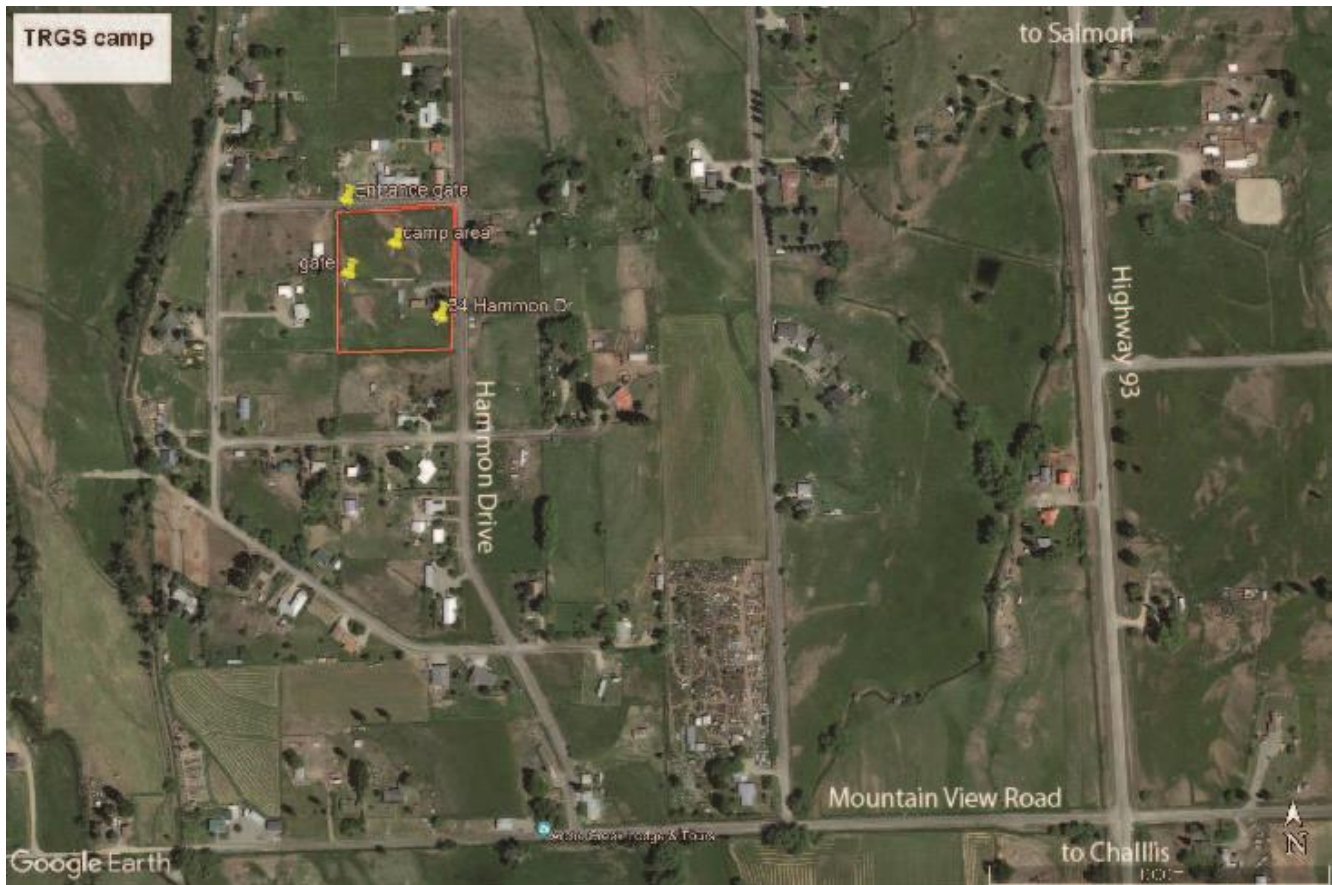
Park in one of the 3 lots indicated on the Google Earth image below. Conference activities will be in the Learning Center. The Interpretive Center just to the east will be open Thursday afternoon and charges \$5 for admission.



### **Camping and Lodging**

A group camping location 3 miles south of town has been arranged with a local landowner for a fee of \$5/night. There will be porta potties and water. The site is essentially a horse pasture without trees, so if you want something more scenic, try the surrounding federal land. Access to the property (street address is 34 Hammon drive) is shown in the Google Earth image:





Accommodations in and around Salmon are listed on the website:

[Where to Stay | Visit Salmon Valley, Idaho](#)

If you would like to see what the BLM possibilities are (very limited and no reservations taken for this high tourist season area): [Salmon Field Office | Bureau of Land Management \(blm.gov\)](#) The recreation sites nearest Salmon are Morgan Bar, Shoup Bridge, and Tower Rock.

## 2023 SALMON CONFERENCE SCHEDULE

### PRE-MEETING FIELD TRIPS

#### Wednesday, July 26

- Humbolt anticline near Dillon (Jim Sears and Michael Hoffman) —some hiking involved.
  - Meet at the Town and Country Foods (former IGA) at the south end of Dillon at 9:00 AM. Camp that night near Dillon or stay in town.

#### Thursday, July 27

- Challis Volcanic Group and a little bit of Belt Supergroup near Lemhi Pass (Jesse Mosolf). This field trip will meet at Lemhi Pass and travel west to join the group in Salmon in the late afternoon. Minimal optional hikes.
  - Meet in the parking area near the restrooms at Lemhi Pass at 9:00 AM.

## **Thursday in Salmon, ID (Sacajawea Center)**

**Conference check-in (TRGS – Belt Association) 4 – 7 PM**

**Hang posters 4 – 7 PM**

### **Poster session notes**

- Posters will be up from Thursday afternoon to Saturday night.
- Pick some 30-minute interval to be standing by the poster and *indicate that time on the poster*
- Spaces are narrow so please keep the poster width to  $\leq 5$  ft.
- No abstracts needed in *NW Geology* Volume to hang a poster.

**Dinner @ Sacajawea Center 6 – 7 PM [Pizza/Salads]**

**Poster Session #1: 7 – 9 PM**

## **Friday Morning – Overview talks (Sacajawea Center)**

7:00 TRGS check-in / registration

7:15-8:00 Make lunches; coffee

8:00 Intro, TRGS stuff

8:30 Geology of the Salmon area — Reed Lewis

8:50 Regional Belt story — Jeff Lonn

9:10 Break + Posters

9:40 Regional structure story — David Pearson and Stuart Parker

10:00 Iron Creek Cu-Co mine research — Katha Pfaff and Danny Schmidt

10:20 Prepare for field trips

10:45 Field trips leave

## **Friday Afternoon – 1/2 day field trips**

1. Belt Supergroup south of Salmon (Reed Lewis and Russ Burmester) — Roadcut stops only
2. Landslides and Challis Volcanic Group — Williams Lake (Dave Stewart, Loudon Stanford, and Jesse Mosolf) — Roadcut stops only
3. Mining — Diamond Creek REE property (Rob Morgan, Rebecca Goddard, and Virginia Gillerman) — Roadcut stops and minor hiking
4. Structure — Belt Supergroup and contact metamorphism east of Sage Creek (Jeff Lonn) — Two miles of off-trail hiking along the top of a ridge

**Dinner @ Sacajawea Center 6 – 7 PM [Brats/Burgers/Veggie Burgers/Salads]**

## **Friday Evening Talks — Belt-Purcell Basin: Sediment provenance and age + Purcell Lava**

7:00 Provenance of Belt-Purcell rocks — Jaime Hirtz, Kurt Constenius, and others

7:40 Regional Belt DZ database and analysis — Stuart Parker and Kurt Sundell

8:00 Peperites of the Purcell Lava and refined geochronology of the Belt-Purcell Basin — Kurt Constenius and Game McGimsey

8:20 Age of the Bonner Formation and Leaton Gulch strata — Jon Lever, Kurt Sundell, and Dave Pearson

## **Saturday, July 29**

**7:15-8:00 Make lunches; Coffee available @ Sacajawea Center**

**Meet your trip @ Sacajawea Center for 8 am departure**

- Challis Volcanic Group — Iron Creek (Dave Stewart) — Roadcut stops only
- Belt Supergroup north and south of Williams Creek Summit (Russ Burmester, Reed Lewis, Dave Pearson, and Liam Knudsen) — Roadcut stops and one short hike
- Augen gneiss, metamorphism, and mylonitization on Main Salmon west of North Fork (Keegan Schmidt, Cody Steven, Rich Gaschnig, and Johnny Murphy) — Roadcut stops only
- Mining — Pope-Shenon mine plus Iron Creek deposit (Skip Yates, George King, Danny Schmidt, and Katha Pfaff) — Short hikes at the Pope-Shenon; roadcut stops only at Iron Creek

**BBQ Dinner @ Sacajawea Center 6 –7 PM**

**Poster Session #2: 7 – 9 PM**

## **Sunday, July 30**

**7:00-8:00 Make lunches; Coffee available @ Sacajawea Center**

**Meet your trip @ Sacajawea Center for 8 am departure**

- Belt Supergroup structures at Trail Gulch (Jeff Lonon and Russ Burmester) — About 5 miles with 1,600 feet of elevation gain through grassland and open forest
- Challis Volcanic Group — Williams Creek to W of Williams Summit (Dave Stewart) — Roadcut stops only
- Mining — Beartrack/Arnett Creek (Reed Lewis, Steve Priesmeyer, and Dan Pace) — Roadcut stops and possibly one short hike
- Challis-Belt float trip south of Salmon (Liam Knudsen and Keegan Schmidt) — A 12 mi float trip along the Salmon River with one series of (maybe) Class II rapids; limited hiking; limited to 19 participants in three rafts but those with their own kayaks or rafts can also join the trip with only a \$15 charge for the lunch
- Structure — Mylonites of the Thompson Gulch thrust near Leadore (Stuart Parker and David Pearson) — Will involve several short hikes on steep ground

## **POST-MEETING FIELD TRIPS (no lunches provided)**

### **Monday, July 31**

- Mineral Hill REE (Joel Schiffer, Madeline Murchland, Cody Steven, Reed Lewis, and Virginia Gillerman) —will involve hiking on steep ground
  - Meet at Sacajawea Center main parking lot (northwest side) at 8:30 AM.

### **Monday ± Tuesday ± Wednesday, July 31 – August 2nd**

- Neoproterozoic and lower Paleozoic strata near Clayton (Dan Brennan, Paul Link, David Pearson, Jacob Milton, Kurt Sundell, and Kyle Mangum) —roadcut stops plus hiking; day 3 has the most strenuous hikes— as long as 3 days, depending on individual interest. Option for motel in Challis on Monday evening; camping required for Tuesday.
  - Meet at Sacajawea Center main parking lot (southeast side) at 8:30 AM.

## REGISTRATION

Registration for the meeting includes a hard copy of 2023 Northwest Geology, edited by Reed Lewis and Alan English. Questions about the field conference, accommodations, or volunteering should be sent to Reed Lewis ([reedl@uidaho.edu](mailto:reedl@uidaho.edu)). Additional conference information may be posted on the TRGS webpage (<http://trgs.org>) or the TRGS Facebook page.

**REGISTER BY MAIL:** Complete the enclosed registration form and pay by check (postmark by July 17). Send to: Tobacco Root Geological Society, P.O. Box 118, Butte, Montana 59703-0118.

**REGISTER ONLINE:** Online registration opens on June 5 at [www.trgs.org](http://www.trgs.org). After registration opens, complete the online registration form and send a check for registration fees to Tobacco Root Geological Society, P.O. Box 118, Butte, Montana 59703-0118 or pay by PayPal. *Please be sure to print your completed registration form before you submit your responses.* Please complete the online registration form no later than July 21.

Online registration is the preferred method of registration for accurate attendee contact information, trip registration, and meal counts.

**Reminder:** No breakfasts are offered during this conference!

All field trip participants, including leaders, must register for the conference. Field trip leaders do not need to pay for the field trip(s) they are leading. Friday, Saturday, and Sunday field trip registration includes lunch.

Please note that there are two places on the form where you can contribute to the scholarship fund of the TRGS – by purchasing a conference T-shirt or by making a direct contribution to scholarships.

## MAIL-IN CONFERENCE REGISTRATION FORM

Please send form with check made out to Tobacco Root Geological Society to:

Tobacco Root Geological Society, P.O. Box 118, Butte, Montana 59703-0118

Attendee Name: \_\_\_\_\_

Attendee Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Phone: (\_\_\_\_) \_\_\_\_\_

Email: \_\_\_\_\_

	No.	Amt. Paid
<b>Conference Registration</b>		\$
1. Professional \$ 75		
2. Student \$ 35		
<i>Are you bringing a poster? Y <input type="checkbox"/> N <input type="checkbox"/>; if yes, please e-mail title + authors to Reed Lewis (<a href="mailto:reedl@uidaho.edu">reedl@uidaho.edu</a>) by July 10</i>		
<b>Meals</b>		
Dinner (Pizza/Salads) Thursday Night \$15.00		
Dinner (Brats/Burgers/Veggie Burgers/Salads) Friday Night \$15.00		
BBQ Dinner Saturday Night \$25.00		
<b>FIELD TRIPS:</b> A = Friday, B = Saturday, C = Sunday. \$15/trip, includes a build-your-own sack lunch and bottled water or pop. <i>Raft trip C4 is \$30 total.</i>		
Trip A1: Belt Supergroup south of Salmon (Reed Lewis and Russ Burmester)		
Trip A2: Landslides and Challis Volcanic Group — Williams Lake (Dave Stewart, Loudon Stanford, and Jesse Mosolf)		
Trip A3: Mining — Diamond Creek REE property (Rob Morgan, Rebecca Goddard, and Virginia Gillerman)		
Trip A4: Structure — Belt Supergroup and contact metamorphism east of Sage Creek (Jeff Lonn)		
Trip B1: Challis Volcanic Group — Iron Creek (Dave Stewart)		
Trip B2: Belt Supergroup north and south of Williams Creek Summit (Russ Burmester, Reed Lewis, Dave Pearson, and Liam Knudsen)		
Trip B3: Augen gneiss, metamorphism, and mylonitization on Main Salmon west of North Fork (Keegan Schmidt, Cody Steven, Madeline Murchland, and Rich Gaschnig)		



Trip B4: Mining — Pope-Shenon mine plus Iron Creek mine (Skip Yates, George King, Danny Schmidt, and Katha Pfaff)		
Trip C1: Belt Supergroup structures at Trail Gulch (Jeff Lonn and Russ Burmester)		
Trip C2: Challis Volcanic Group — Williams Creek to west of Williams Summit (Dave Stewart)		
Trip C3: Mining — Beartrack/Arnett Creek (Reed Lewis, Steve Priesmeyer, and Dan Pace)		
Trip C4: Challis-Belt float trip south of Salmon (Liam Knudsen and Keegan Schmidt) \$30 for trip; only \$15 for those who provide their own kayak or raft; limit 19 in rafts, not including the two leaders.		
Trip C5: Structure — Mylonites of the Thompson Gulch thrust near Leadore (Stuart Parker and David Pearson)		
Field Conference T-shirt, please specify number and size, \$15/each		

**TOTAL CONFERENCE FEES \$ \_\_\_\_\_**

Other field trips are cost free, but you will need to bring your own food, snacks and drinks. Please sign-up (check the box next to the trip(s) you plan to join) to give the trips leader(s) a head count:

**Pre-meeting trips (no charge)**

- Wednesday, July 26: Humbolt anticline near Dillon (Jim Sears and Michael Hoffman) — camp near Dillon or stay in town.
  - o Meet in Dillon at 9:00 AM. @ Town and Country Foods Supermarket
- Thursday, July 27: Challis Volcanic Group — Lemhi Pass (Jesse Mosolf) leaving from Dillon or Salmon. Minimal optional hiking.
  - o Meet at Lemhi Pass at 9:00 AM.

**Post-meeting trips (no charge)**

- Monday, July 31: Mineral Hill REE (Joel Schiffer, Madeline Murchland, Cody Steven, Reed Lewis, and Virginia Gillerman)
  - o Meet at Sacagawea Center at 8:30 AM.
- Monday ± Tuesday ± Wednesday, July 31 – August 2: Neoproterozoic and lower Paleozoic strata near Clayton (Dan Brennan + ISU mafia) — as long as 3 days, depending on individual interest. Option for motel in Challis on Monday; camping required for Tuesday night.
  - o Meet at Sacagawea Center at 8:30 AM.

**DONATIONS (Optional)**

Complete this portion of the registration form if you wish to **MAKE A DONATION** to the TRGS Scholarship fund. PLEASE SPECIFY ALLOCATION(S) BELOW.

<b>TRGS Scholarship</b> for field-based projects in the northern Rocky Mountains. Preference given to mapping projects in Montana, Idaho, and northern Wyoming. Based in part on need, the scholarship is expected to be used for field expenses.	\$
Please indicate: to grow the TRGS endowment _____ OR to spendable funds _____	
<b>Belt Association Scholarship</b> (This is not an endowment; all contributions are spendable.) Funds are available to support field-based student projects in the Belt Supergroup or correlative strata.	\$
<b>Harrison Scholarship</b> In memory of Jack Harrison and made possible by a generous endowment from Jack to the TRGS, awards go to students working on any project involving Precambrian rocks. Based in part on need, this award can only be used for field expenses.	\$
Please indicate: to grow the Harrison endowment _____ OR to spendable funds _____	
<b>Foster Scholarship</b> (This is not an endowment; all contributions are spendable.) Given in memory of Michael Thompson Foster, to students, researchers, or explorationists who best exemplify the prospector ethic. Criteria are a demonstrated interest and ability in mineral exploration, field research, or economic pursuits which advance our knowledge of mineral commodities and public commitment to responsible mining. Supported by generous grants from Rob Foster and additional donations.	\$
<b>M. Dean Kleinkopf Scholarship</b> (This is not an endowment; all contributions are spendable.) Given in memory of Dean Kleinkopf, for geophysical and geologic investigations in the northern Rocky Mountains. Supported by an initial grant from Nancy Kleinkopf and additional donations.	\$
<b>The Betty Skipp Research Award for Field Studies in the Rocky Mountains</b> (This is not an endowment; all contributions are spendable). Given in honor of Betty Skipp, to women M.S. or Ph.D. students for research with a significant component of original geological fieldwork in Idaho, Montana, Utah, Colorado, or Wyoming. If funds are sufficient, men may also be supported.	\$
<b>Unrestricted</b>	\$

**TOTAL DONATION** \$ \_\_\_\_\_

**TOTAL AMOUNT ENCLOSED (Conference + Donation)** \$ \_\_\_\_\_

**\*\* Please submit payment check with this registration form \*\***